Distributed by:

JAMECO® ELECTRONICS

www.Jameco.com ✦ 1-800-831-4242

The content and copyrights of the attached material are the property of its owner.

Jameco Part Number 133129

Data Sheet
BPK216 • v1.2 • 01/99

2x16 Serial LCD Module with Supertwist Display

3.2 x 1.4 in. (80 x 36 mm)

Inexpensive, high-quality displays equipped with the LCD Serial Backpack® interface (2400 or 9600 bps) for convenient 1-wire connection to computers and controllers.

Simplified Interface

Why hassle with parallel-bus LCDs? These 2x16 serial LCDs use our Backpack interface to accept simple 2400 or 9600-baud serial (RS-232 or inverted TTL level, no parity, 8 data bits, 1 stop bit). Connect +5V power, ground and serial data, and you're ready to go. Send text to the Backpack and it appears on the screen—it's that simple.

The Backpack provides easy access to all LCD features; just preface any instruction with ASCII 254 (0FE hex). For example, the clear-screen code is 1. To clear the screen, send two bytes: <254><1>. The manual includes a listing of LCD instructions, examples, and tips.

For LCDs that work more like a terminal with tabs, returns, linefeeds, etc. see our ILM, 4x20, 4x40, and graphics models.

Smart, Proven Design

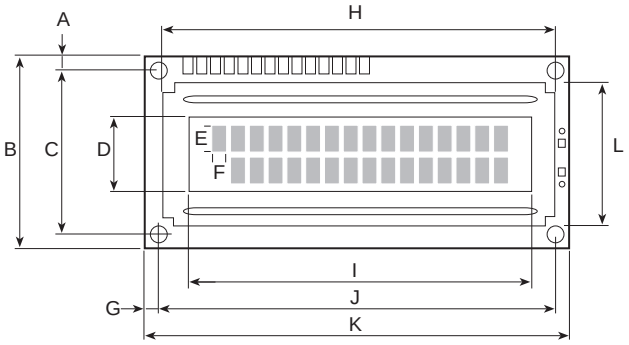
The LCD Serial Backpack is based on a custom microcontroller running tight code at just 480kHz. In typical applications, it draws less than 3mA including the LCD. Minimal parts count and sensible design make it rugged and reliable. Those same virtues have made the controller IC popular with OEMs; place our chip on your circuit board and the LCD interface is done.

Figure 1. Dimensional data

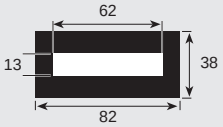
We currently use 2x16 LCD modules from Powertip (PT). Some of our older modules were made by DataVision (DV). All critical dimensions are the same, but the newer PT units have larger characters.

		DV	PT
A	y offset pcb edge to hole ctr	2.50	2.50
B	y pcb height	36.00	36.00
C	y hole spacing	31.00	31.00
D	y screen opening	16.10	16.20
E	y character size	4.89	5.94
F	x character size	2.78	2.95
G	x offset pcb edge to hole ctr	2.50	2.50
H	x screen frame	71.20	71.00
I	x screen opening	62.50	66.00
J	x hole spacing	75.00	75.00
K	x pcb width	80.00	80.00
L	y frame height	26.20	25.00
-	mounting hole diameter	2.50	2.50
-	frame depth, non-backlit	4.70	5.00
-	frame depth, LED-backlit	9.40	8.50

- All dimensions in mm.
- Worst-case tolerance for any dimension is ±0.50mm.
- Maximum depth (from front of screen frame to tips of interface header posts) is 26mm.
- Dimensions based on information provided by manufacturers—subject to change without notice.



Optional Faceplate (BEZ-216; sold separately)



(thickness = 7mm)

Table 1. Basic specifications

Power requirements	4.8 to 5.5 Vdc @ 3mA (incl. LCD)
User connector	5-pin header; 0.025" posts on 0.10" centers
Connector pinout	+5 GND SER GND +5
Serial input	RS-232, or inverted TTL/CMOS, 9600 or 2400, N81
Operating temperature	0° to 50°C (32° to 122°F)
Initialization	Switches LCD power, performs soft init
Instruction prefix	ASCII 254 (0FE hex)
LINES configuration	switch down for 1-line, up for 2 or 4 lines
BPS configuration	switch down for 2400, up for 9600

Table 2. Commonly used LCD instructions by code

Clear screen	1
Home (undo scrolling of DD RAM)	2
Blank display (retaining data)	8
Hide cursor	12
Show underline cursor	14
Move cursor one character left	16
Move cursor one character right	20
Scroll display one character left	24
Scroll display one character right	28
Set DD RAM address (position cursor)	128+addr
Move to first character of first line	128
Move to *nth* character of first line	128+*n*
Move to first character of second line	192
Move to *nth* character of second line	192+*n*
Set CG RAM address (for custom characters)	64+addr

Preview complete instruction manual via Internet—
`www.seetron.com`